

Tulare County Information & Communications Technology Department

Executive Summary: Bee-Tracking Application

Overview: The Bee-Tracking Application allows Tulare County's Department of Agriculture to easily track and report on beekeeping locations.

Challenge: Tulare County is the largest producer of honey in all of California, a product whose worth totals over \$44,000,000. Bees are also vital in pollinating blockbuster crops like almonds, kiwis and cherries, whose production and sale generates thousands of jobs and millions of dollars for the County. Yet these bees require a tremendous amount of maintenance and care. Bees must be kept safe from pesticide sprays and their hives must be moved six times each year. And because their yield is so valuable, their security is paramount to beekeepers, who must protect the exact location of their hives from thieves.

Until recently, however, the prevailing method of tracking and reporting on beehives consisted of time-intensive analog processes involving pushpins, paper maps and thousands of tiny labels. Each beekeeper had to report to County offices and manually locate their hives on a floor-to-ceiling map. Small plastic discs were used to approximate buffer zones and property barriers. Local pesticide sprayers would have to ask County employees to check the map and identify whether specific parcels were off-limits to spraying because of beehives present. This method presented challenges in terms of security and accuracy.

Innovative Solution: To solve this problem, Tulare County Information & Communications Technology (TCiCT) charged its Geographic Imaging Systems (G.I.S.) team to devise a digital application capable of safely storing beehive information with a far greater degree of accuracy than the previous method. This web-based app allows authorized County technicians to replace the old analog system with a sleek, up-to-date interface dedicated to accurate hive locations and contact information for beekeepers. Over 250 separate beekeepers, maintaining over 138,000 hives, can now submit their information to the County via digital input. Using a modern digital map, technicians can select a parcel's address and immediately have

access to an accurate hive count, the beekeeper's contact information and a precise measure of the one-mile buffer area in which pesticide-spraying is prohibited.

In the interests of security, this information is available only to County users within the Department of Agriculture and is accessible only on the County network. Sprayers, who once waited days for data on permissible spraying areas, can now contact the County via phone or email and receive this data in mere moments. And because the digital nature of the application makes information so much more exact, beekeepers do not have to worry about transcription errors or a misplaced pushpin causing costly damage to their colonies.

Originality: The beekeeping web-app created by TCiCT is the most advanced of its kind and takes into account security and ease-of-use more intensely than any other similar app, of which there are almost none. The creativity and unique nature of this project was such that the County Ag Commissioner received several inquiries into purchasing the app after presenting it at a state-wide conference.

Cost-Effectiveness: This project was undertaken as part of TCiCT's ongoing technical support of the Department of Agriculture; thus, no external costs were generated and no budget was necessary. TCiCT completed this application as part of its standard operations.

Results: The beekeeping application has significantly improved record-keeping, speed of service and accuracy of information in a matter of months since its early 2016 introduction. Additionally, the interconnected nature of agriculture means that improvement in the welfare of Tulare County bees has attached to it added value for other crops in the region. As our bees grow in number and vitality as a result of this application, they pollinate the land around them, further strengthening the crop base that provides the County with its financial backbone.

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